CAPACITY DEVELOPMENT STRATEGY FOR EXISTING PUBLIC WATER SYSTEMS

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Indiana Department of Environmental Management
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Background

The 1996 Amendments to the Safe Drinking Water Act (SDWA) emphasize the prevention of contamination of water supplies and encourage the proper management of public water systems to ensure the delivery of safe drinking water to all citizens. The capacity development provisions of the Act focus on the enhancement and maintenance of the technical, managerial, and financial capabilities of public water supplies. Section 1420(c)(1)(C) of the SDWA requires that States develop and implement a strategy to assist existing public water systems in acquiring and maintaining technical, managerial, and financial capacity. The State risks losing a percentage of the annual allotment of the Drinking Water State Revolving Fund (DWSRF) if it does not develop and implement a capacity development strategy for existing public water systems. The State must be developing and implementing a strategy by
August 6, 2000.

The federal requirements for developing a capacity development strategy include the following:

1. Identify and prioritize systems in need of improving capacity;
2. Identity the factors that encourage or impair capacity development;
3. Describe the methods the State will use to assist public water systems (PWS's) in complying with existing drinking water regulations, encourage partnerships among systems, and assist in the training and certification of operators.
4. Describe the baseline that the State will use to measure effectiveness of the strategy; and
5. Identify the involvement and participation of stakeholders in the creation of the strategy.

This document describes the process used to develop a capacity development strategy in Indiana and describes the methods and tools that will be used to implement the strategy within the State.

Public Participation

The Indiana Department of Environmental Management (IDEM) utilized the expertise and experience of stakeholders both within and outside of the agency to develop an approach to address the capacity development provisions of the 1996 Amendments of the Safe Drinking Water Act. *(Requirement 5)* The "external" and "internal" meetings focused on each of the federal requirements to consider in developing a capacity development strategy, as stated above. "External" meetings were held on April 15, May 24, July 1, July 29, and October 14, 1999 and July 12, 2000. Meeting attendees included representatives from the following organizations or sectors:

- Indiana Department of Environmental Management (IDEM)
- United States Environmental Protection Agency (EPA)
- American Water Works Association (AWWA)
- Indiana Rural Water Association (IRWA)
- Indiana Water and Wastewater Association (IWWA)
- Indiana Utility Regulatory Commission (IURC)
- Indiana's Office of the Utility Consumer Counselor (OUCC)
- Rural Community Assistance Program (RCAP)
- Indiana Manufactured Housing Association (IMHA)
- Public Water Supplies (Private and Municipal)
- Consulting Firms
- Contractors
- Law Firms

In addition, all meeting announcements and notes were mailed to various state agencies, water associations, activist groups, county and local health departments, consultants, public water supplies, and any additional interested stakeholders.

"Internal" stakeholder meetings were held on June 11, August 25, September 8, September 9, and September 16, 1999. Work group members included representatives from the Compliance, Field Inspection, Ground Water, and Permit sections of the Drinking Water Branch. The purpose of these meetings was to gather input from personnel within the agency regarding the tools and resources that may be available for use in implementing the Capacity Development Strategy. The staff discussed the criteria that could be used to categorize systems as "At Risk" or "Marginal Risk", what tools are available to use to build system capacity, what tools should be developed to build system capacity, and what criteria are available to use as a baseline measure. The staff participated in a brainstorming session to identify the tools currently available to build capacity among systems and to identify some tools that may need to be developed. Appendix A provides a summary of the situational examples that were used to identify existing and potential capacity building tools. The work group also began drafting this Capacity Development Strategy to present to the external work group.

The focus of the external meeting on April 15 was to develop a list of the criteria to characterize a public water supply as “Good” or “Marginal”. At the meeting held on May 24, these descriptions were changed to “Low Risk” and “Marginal Risk”, and the criteria for “At Risk” systems were also discussed. (See Appendix B for a copy of Table 1-Characteristics of a Public Water System, which was developed during these meetings.) This information would be used later to determine the criteria to use to identify and prioritize systems in need of improved capacity. *(Requirement 1)*

The June 11 internal work group meeting participants discussed the tools readily available to screen “At Risk” systems. These could potentially be used for a short-term (initial) approach to capacity development. The internal work group also discussed tools that can be used to screen “Marginal Risk” systems, which could be considered for a long-term approach to capacity development. (See Appendix C for a copy of the document that summarized these tools.) This information was distributed for comment at the July 1 external work group meeting and mailed to everyone on the distribution list on July 20. This information was helpful in developing an approach to identify and prioritize systems in need of improved capacity, as well as providing a basis to develop how the State will implement the Capacity Development Strategy. *(Requirement 3)* Some of the tools identified were also useful in determining a baseline to measure the effectiveness of the Strategy. *(Requirement 4)*

At the external stakeholders meeting on July 1, the group also discussed the factors that encourage or impair capacity development. (*Requirement 2)* (See Appendix D for a copy of the summary of factors that was developed at the meeting.) There was also a discussion of the potential factors that the State could consider to use as a baseline measure of the effectiveness of the Capacity Development Program. (See Appendix E for the listing of potential baseline measures.) *(Requirement 4)*

At the July 29 external work group meeting, the group brainstormed ideas for tools that may be used to build capacity among public water supplies. Specific consideration was given to propose tools that may be used to build capacity at small systems serving less than 500 customers. (See Appendix F for the tables of the tools that may be considered to build capacity.)

The first draft of the Conceptual Strategy for Capacity Development for Existing Public Water Systems, compiled by the internal work group, was presented to the external work group at the October 14 meeting. The meeting participants provided numerous constructive comments and suggestions. It was proposed to incorporate the revisions to the draft strategy, then submit a copy to EPA for a preliminary review. IDEM submitted a copy of the draft strategy to EPA Region V on February 3, 2000.

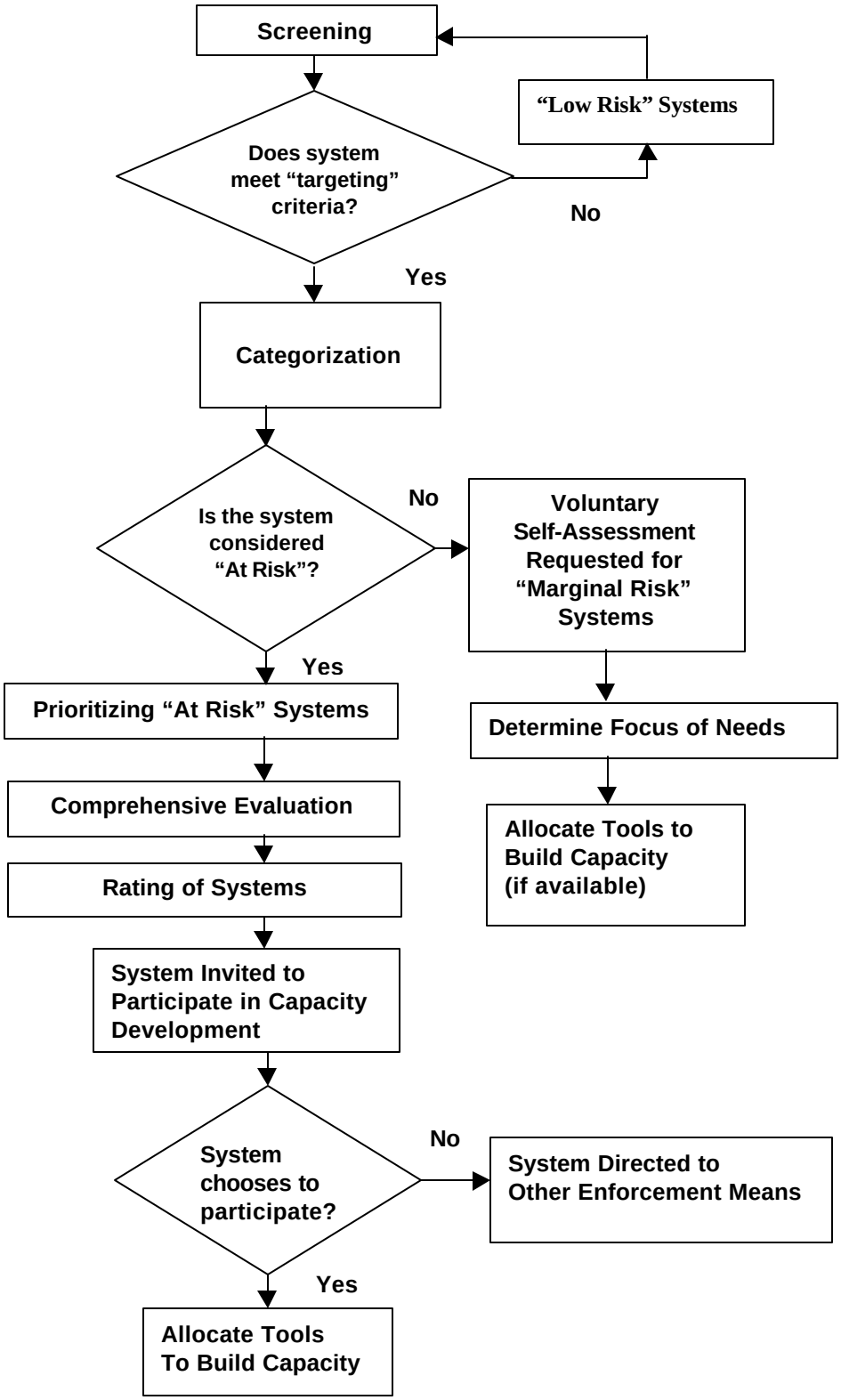
The draft strategy was also presented at various water association conferences and regional meetings during the past year, such as the Indiana Section AWWA Annual Conference in February, and the IRWA Spring Conference in April 2000. The strategy approach was summarized as part of a capacity development presentation, and comments to the draft were encouraged. Extra copies of the strategy were available at the IDEM Outreach Booth for distribution to the public.

EPA Region V provided comments to the draft on March 27, 2000. They also forwarded a copy of the draft to EPA Headquarters for review and comment. The draft was revised to incorporate EPA's comments and presented to the external workgroup on July 12, 2000. This draft incorporates all comments received from EPA Region V and stakeholders as of July 12, 2000.

Strategy Implementation

The implementation of this Capacity Development Strategy involves several steps to determine which public water supplies are most in need of improved technical, managerial, and financial capacity. All public water supplies will be screened initially to determine if further evaluation is necessary. The systems will then be categorized and ranked to determine the extent and focus of their needs. Once the needs of the systems are determined, the systems that choose to participate in a "capacity building" effort may be directed to various tools or resources that may be used to enhance the capacity of the public water supply. See Figure 1 for a flow diagram of the proposed capacity development process.

Figure 1
Capacity Development for Existing Public Water Supplies
Process Flow Diagram



Screening of Public Water Systems for Capacity Development

All public water systems will initially be screened to determine who will require further evaluation regarding the need for improved technical, managerial, or financial capacity. A variety of databases exist that provide easily accessible information regarding the compliance status and capacity of a public water supply. The databases will be searched, and a list of systems will be compiled for further evaluation. The majority of the information to "screen" public water systems will be retrieved from these databases. However, systems may also be recommended for further evaluation by field inspectors or other staff that may be aware of problems at a public water supply, but the information is not currently captured in one of the databases.

The following information would be used to initially "target" systems for further evaluation of capacity.

- IDEM Compliance Information
  - Maximum Contaminant Level (MCL) Exceedences
  - Treatment Technique (TT) Violations
  - Action Level (AL) Exceedences
  - Monitoring and Reporting (M&R) Violations
  - Monthly Report of Operation (MRO) Submittals
  - Violation of Construction Permit Regulations
- Complaints
  - Drinking Water Branch (DWB) Complaints Database
  - Indiana Utility Regulatory Commission (IURC) Consumer Complaints Database*
  - Office of Utility Consumer Counselor (OUCC) Complaints Database*
- Certified Operator Requirements
- Operation and Maintenance (O&M) Problems
- Sanitary Survey or Other Inspection Deficiencies
- Early Warning Order/Connection Bans
- Other Data
  - IURC Accounting Database (Annual Report Submission)*
  - OUCC Data*
  - Indiana State Department of Health (ISDH) Data*
  - State Budget Agency (SBA) Data*
  - State Board of Accounts*
  - Secretary of State Filings*
  - Tax Data*
- Field Inspector Input

*(The information specified with an * is in the process of further evaluation in order to determine what information may be useful, the ease of use, and the potential for automated searches.)*

It is proposed that the database searches will be performed quarterly to determine if any additional systems should be recommended for further evaluation for capacity development.

Maintaining "Low Risk" Systems

Systems that do not meet the "targeting" criteria in the initial screening process are considered "Low Risk" systems. These systems will continue to be screened on a quarterly basis to determine if their "Risk" classification has changed. These systems will continue to be served by IDEM's educational and outreach efforts. IDEM will continue to send courtesy reminder letters for non-TCR related monitoring requirements, offer monitoring waivers and/or monitoring reductions to eligible systems, conduct sanitary surveys on a regular basis, distribute educational information regarding new requirements, and provide telephone and on-site assistance, as necessary. These systems may also be offered the opportunity to perform a self-assessment that addresses the technical, managerial, and financial aspects of the system.

Categorizing Systems in Need of Improving Capacity

Screened systems will be further evaluated to determine whether they are "At Risk" (having very little, if any technical, managerial, or financial capacity to operate) or "Marginal Risk" (having some capacity, but not adequate capacity for operation of a public water system). IDEM will perform a detailed assessment of the data used to determine that a facility should undergo further evaluation. The following criteria will be used to categorize a system as "At Risk" or "Marginal Risk":

Compliance Information:

- If a system has unaddressed violations of a maximum contaminant level or continuous exceedences of a maximum contaminant level, that system will be considered "At Risk".
- If a system has unaddressed violations of a treatment technique requirement or continuous violations of a treatment technique requirement, that system will be considered "At Risk".
- If a system has unaddressed action level exceedences or continuous action level exceedences, that system will be considered "At Risk".
- If a system receives a warning of noncompliance (WONC) letter for monitoring and reporting (M&R) violations, they are considered "Marginal Risk". However, if they do not respond to the WONC or do not adequately address the violations, they will be considered "At Risk".
- If a system is required to submit a monthly report of operation (MRO) and does not submit on a regular basis, they will be considered "At Risk".
- If a system does not report required information on their MRO and that information pertains to a part of the treatment that could indicate potential health concerns (i.e., turbidity, chlorine residual), the system will be considered "At Risk". If the information that is not reported does not pertain to a part of the treatment that could indicate potential health concerns (i.e., iron, manganese), the system will be considered "Marginal Risk".
- If an existing public water supply is granted a construction permit, but constructs before the permit is valid, the system will be considered "Marginal Risk". If an existing system constructs without a permit, uses materials not specified in the construction permit, or

constructs in a location other than that specified on the permit, they will be considered "At Risk".

Complaints:

- If the issue raised by the complaint could cause a risk to human health and the complaint has not been addressed, the system will be considered "At Risk".
- All other complaints will be evaluated on a case-by-case basis.

Certified Operator requirements:

- If a system is required to have a certified operator and they do not have one, the system will be considered "At Risk".
- If a system has an operator who has violations in other certifications (i.e., wastewater), the system will be considered "At Risk".

Operations and Maintenance (O&M) problems:

- If a system does not have a maintenance plan, they will be considered "Marginal Risk".
- If a system does not have twenty-four (24) hours of storage capacity, they will be considered "Marginal Risk".
- If a system has no storage capacity, they will be considered "At Risk".
- If a system or operator falsifies records, the system will be considered "At Risk".
- If a system experiences water loss (*10-20%)*, they will be considered "At Risk".
- If the water pressure in a system drops below twenty (20) psi at any point, the system will be considered "At Risk".
- If a system is required to issue a Boil Advisory and does not properly notify the customers or IDEM, the system will be considered "At Risk".

Sanitary Survey or Other Inspection Deficiencies:

- If a system does not follow-up on sanitary survey or other inspection deficiencies, and the deficiencies address critical safety or public health issues, the system will be considered "At Risk."
- If a system does not follow-up on sanitary survey or other inspection deficiencies, and the deficiencies address non-critical safety or public health issues, the system will be considered "Marginal Risk."
- Follow-up on inspection deficiencies is confirmed via a letter from the public water supply that documents that the issues have been addressed and/or by a follow-up visit from the field inspection staff or contracted circuit rider.

Early Warning Order/Connection Ban:

- If a system has an early warning order, they will be considered “Marginal Risk”.
- If a system does not respond to an early warning order, they will be considered “At Risk”.
- If a system is issued a connection ban, they will be considered “At Risk”.

Other data:

- *This information needs further evaluation*. *During implementation, we will evaluate whether this information is available and/or adds significant value to the categorization process.*
- Additional items that may be used for categorizing systems include, but are not limited to:
  - Records of infrastructure and treatment
  - Ownership changes
  - Submittal of annual reports to IURC, OUCC, and/or SBA
  - Review most recent IURC order
  - Payment or nonpayment of taxes
  - Filing status with Secretary of State
  - Rates
  - Metering status
  - Owner type

Prioritizing Public Water Systems Within Categories

“At Risk” systems will be further prioritized to determine who should be considered for evaluation first. For the first year of implementation, source type, system type, and population data will be used to prioritize the systems that should be addressed first. It is expected that additional criteria may be used to prioritize systems in the future.

	High Priority	**Low Priority**
Source Type	Surface Water & Ground Water Under the Direct Influence of Surface Water	Ground Water & Purchased
System Type	Community Water Systems & Noncommunity Water Systems With Susceptible Populations	Noncommunity Water Systems With Nonsusceptible Populations
Population	Systems Serving >10,000	Systems Serving <10,000

Comprehensive Evaluation of "At Risk" Systems

Once a PWS is categorized as an "At Risk" system, IDEM must determine what type of assistance is needed to improve the capacity of the system. The type of assistance needed may differ at each system, depending on the extent and severity of the technical, managerial, or financial needs. A Comprehensive Evaluation of the "At Risk" system will be conducted by IDEM and/or the public water supply. The Comprehensive Evaluation will help to identify specific problems or need for improvement, in order to determine what type of assistance is necessary.

During the first year of implementation (Federal Fiscal Year 2001), Comprehensive Evaluations will be completed by IDEM staff and/or the public water supply, depending on the number of evaluations needed and the availability of IDEM staff and/or contractor assistance to conduct them. (IDEM is currently in the process of procuring contract services for a circuit rider.) It is anticipated that the Comprehensive Evaluations will be conducted in one of three ways:

1) The Comprehensive Evaluation will be performed by the Drinking Water Branch staff or contracted circuit riders, utilizing all available information from database and file searches, in conjunction with an on-site visit by the field inspector or other designated person;
2) The system will be requested to complete and submit a Comprehensive Evaluation Form which would be reviewed by the DWB to determine the needs of the system; or
3) The system will be requested to complete a Comprehensive Evaluation Form, which would be followed by an assessment of the information submitted and on-site visit by the DWB staff or contracted circuit rider.

At the current time, IDEM does not have any specific rules that require public water supplies to submit Comprehensive Evaluations, however this may be considered in the future.

As part of the implementation of this strategy for Federal Fiscal Year 2001, a Comprehensive Evaluation Form will be developed. IDEM is currently pursuing an option to hire a contractor to develop the form. (It is possible that this same form may be used as a self-assessment tool for all public water supplies to utilize on a voluntary basis. The State may specifically request that "Marginal Risk" systems complete this evaluation.)

Rating Public Water Supplies

Once the systems are evaluated, they will be "rated" to help identify the type and degree of assistance necessary to improve the technical, managerial, and financial capacity of the systems. IDEM intends to begin developing a "rating system" during this federal fiscal year. The information gained from the categorization, prioritization, evaluation, and rating of the public water systems will allow the agency to determine what capacity building tools should be used to assist the systems, what resources should be allocated to address specific concerns, or what capacity building tools may need to be developed.

Candidates to Participate in Capacity Development Process

Once the "At Risk" systems are evaluated and rated, it will be determined whether the system is willing to participate in a capacity building program. If so, a face-to-face meeting will be held with the system so that the system may enter into an agreement to participate in the capacity development process. If the system is not willing to address the capacity development issues, the system will be referred for enforcement action.

If a system agrees to participate in capacity building, IDEM will utilize available resources and tools to assist the system. IDEM is also in the process of procuring contractors to provide one-on-one assistance to public water supplies to enhance the technical, managerial, and financial capabilities of the system.

Tools to Use to Build Capacity

Once a system agrees to participate in a capacity building effort, IDEM will assist the system by directing them to various resources that are available to use to acquire or maintain adequate technical, managerial, or financial capacity. There are various tools currently available that may be used by systems to enhance capacity. Individual public water supplies may utilize these tools to address system specific issues. For example, if a system is having operational problems, IDEM may refer them to a water association circuit rider that may spend some time to identify and address the specific needs of the system. Some of the tools may also be used to encourage the capacity of all public water supplies, such as the use of mass mailings to inform systems of new rules and requirements. There are also additional tools that may be developed as part of the long-term implementation of the Capacity Development Strategy.

The following tools may be used for assisting an individual system in attaining and/or maintaining technical capacity:

- Technical assistance from water associations, including assistance on violations, recurring complaints, problem solving, and engineering and facility needs, which include, but are not limited to: flushing, looping, pressure problems, chemical feed, Wellhead Protection, new requirements, construction permit applications, cross connection control, and treatment process evaluation;
- Technical assistance from IDEM on the same issues;
- Technical assistance from other water systems on the same issues (mentoring);
- Referral of systems from IDEM to a water association, circuit rider, or mentoring system for follow-up on operation and maintenance issues;
- IDEM follow-up to ensure that systems address issues or deficiencies noted in sanitary surveys or on-site assessments;
- Operator training;
- IDEM assessment of Monthly Report of Operation (MRO) forms;
- IDEM review of applications for the operator certification exam;
- Completion of source water assessments by IDEM;
- Performance of well site surveys by IDEM; and
- IDEM assistance with engineering reports and permit applications.

The following tools may be considered for development to use to assist water systems in attaining and/or maintaining technical capacity:

- Comprehensive Evaluations, performed by IDEM (or it's contractor) or the public water system, for systems categorized as "At Risk";
- Voluntary self-assessments for all public water systems, or, at a minimum, those systems that are categorized as "Marginal Risk";
- Completion of contingency plans by public water systems;
- Direct data submittal by contract laboratories (automated reporting); and
- Encourage or require the consolidation or regionalization of systems incapable of maintaining adequate capacity.

The following tools may be used for assisting systems in acquiring and/or maintaining managerial capacity:

- Provide more education for owners and operators;
- Provide proactive training by water associations and IDEM;
- Bring operators and managers or board together for a meeting; and
- Provide opportunities for mentoring.
- Provide on-site support by a small system assistance contractor regarding managerial issues.

The following tools may be considered for development to use to assist water systems in attaining and/or maintaining managerial capacity:

- Provide incentive-based training for board members and managers on new and existing rules, including the possibility of having specific training mitigate past violations for monitoring and reporting;
- Require systems to have organizational charts;
- Require systems to have operations and maintenance (O&M) manuals;
- Require systems to have emergency operations plans;
- Have managers co-sign all applicable documentation that is sent to IDEM (at a minimum, have them sign MROs);
- Have some type of recognition system for systems that do a good job (or an outstanding job);
- Encourage systems to remain under IURC jurisdiction, if applicable, and meet the requirements for a Certificate of Need and Necessity;
- Require operating requirements;
- Notify managers of the training requirements for operators;
- Recognize systems that perform voluntary self-assessments; and
- Encourage or require the consolidation or regionalization of systems incapable of maintaining adequate capacity.

The following tools may be used for assisting systems in attaining and/or maintaining financial capacity:

- Refer systems to the Environmental Infrastructure Working Group (EIWG), which consists of the
  - Indiana Department of Commerce (IDOC)
  - IDEM State Revolving Loan Fund
  - Indiana State Budget Agency
  - Indiana Rural Development Council
  - United States Economic Development Administration (US EDA)
  - United States Department of Agriculture (USDA) Rural Development
  - Indiana Rural Community Assistance Program (RCAP);
- Encourage systems to become affiliated with professional organizations such as IWWA, AWWA, IRWA, etc.;
- Direct systems to OUCC for assistance with rate increase determinations;
- Encourage systems to contact a utility rate consultant or the OUCC to assist with a rate study to determine adequate rates;
- Encourage OUCC to follow-up on recommendations of IURC orders; and
- Provide on-site support by a small system assistance contractor regarding financial issues.

The following tools may be considered to develop to use to assist water systems in attaining and/or maintaining financial capacity:

- Accounting and bookkeeping training, including the development of a bookkeeping manual for small utilities;
- Provide assistance in financial planning and capital improvement planning;
- Help systems set up accounts in books;
- Provide management training on financial issues;
- Provide training on cash flow and budgeting;
- Require maintenance budgets;
- Assist systems in setting up metering or separate billing to create an account for revenues generated by the water system; and
- Encourage or require the consolidation or regionalization of systems incapable of maintaining adequate capacity.

Identify the Factors that Encourage or Impair Capacity Development

There are many factors that encourage or "push" public water systems toward adequate capacity. The work group identified and discussed some of the benefits provided by these factors. These factors include, but are not limited to:

- IDEM factors
  - Assistance from professional organizations;
  - Streamlining of the construction main permitting process;
  - IDEM permit regulations;
  - Standardized Monitoring Framework spreadsheets;
  - Sanitary Surveys (information gained if frequent and in conjunction with onsite visit);
  - Well Site Surveys (feasibility of site before purchase of land or placement of well);
  - Funding sources (SRF, IDOC);
  - The ability of private water systems to get SRF funding;
- Other State Agency factors
  - Financial information from State Board of Accounts and OUCC;
- Water System factors
  - Systems being in the water business (municipalities, private water companies);
  - Water conservation;
  - Systems assisting other systems;
  - Certified operators;
  - Operators that work with IDEM (are willing to ask for and accept help);
  - Well organized records and plant;
  - Satisfied customer base;
  - Capital development plans (Needs Survey);
  - Common rates;
- Other factors
  - Assistance from professional and community action organizations (IWWA, IRWA, AWWA, RCAP, etc.);
  - Proactive local governments.

There are many factors that impair or "push systems away" from adequate capacity. The work group identified these factors and discussed some of the problems associated with them. These factors include, but are not limited to:

- IDEM factors
  - Timeliness issues;
  - Cost of regulations, permits, delays;
  - Complexity of sampling program;
  - Sanitary surveys may not be done very often (unknown for large systems);
  - Staffing issues (not enough people to perform sanitary surveys);
  - Other sanitary survey issues (regulations require systems to have sanitary surveys done, who should do it?);
  - Lack of over-site ability for construction – construction not done as planned and approved;
  - Costs of regulations;

        - Costs of permits;
        - Costs of delays in permits;
        - Wellhead protection requirements for new wells and wellfields;
        - State doesn't give resources to do what needs to be done;
        - Inconsistency in capacity requirements between IDEM and State Fire Marshall;
    - Other state agency factors
        - OUCC;
        - Cost and time involved in preparing rate case;
        - Politics;
        - Inconsistency in capacity requirements between IDEM and State Fire Marshall;
    - Water system factors
        - Cost and time involved in preparing rate case;
        - Merger and acquisition adjustment to "fair market value";
        - Systems not in water business (NTNCs, TNCs, mobile home parks, etc.);
        - Personnel can't be trained because they don't have back-up;
        - Certified operators need training in order to retain certification – where can they get it?
        - Board members are untrained and may not know what is needed;
        - Systems don't have operating standards;
        - Service area issues;
        - When taking over a system, there may be infrastructure problems;
        - Not all systems plan for capital development;
        - No cost recovery or incentives to pick up troubled systems;
        - Local government structures;
        - Inadequate storage;
        - Falsification of reports;
        - Infrastructure problems;
        - Some systems are unwilling to ask for or accept help.

As part of IDEM's long-term approach to capacity development, we will continue to use the tools that encourage capacity and make improvements as needed. We will attempt to reduce or eliminate the factors that hinder systems from obtaining adequate capacity. Part of the long-term strategy will include identifying the factors to focus on for improvement, propose solutions or methods to mitigate the problems, and direct the appropriate resources to improve or eliminate the factors that impair capacity.

Describe the Methods the State Will Use to Implement the Strategy

There are various authorities, resources, and methods provided by the Safe Drinking Water Act and the Indiana Public Water Supply Supervision Program that IDEM can use and is currently using to assist public water supplies in complying with the National Primary Drinking Water Regulations, encourage partnerships between public water systems, and assist public water supplies in the training and certification of operators.

- The Indiana Drinking Water State Revolving Fund (DWSRF) Program provides low-interest loans to public water supplies to fund infrastructure improvements that support compliance with the national and state primary drinking water regulations.
- DWSRF set-asides will be utilized to improve the technical, managerial, and financial capacity of the public water supplies. The following services are proposed to be implemented by using qualified contractors:
  - Provide on-site assistance to public water supplies in order to assess the needs of the system and work with them to improve any deficiencies found;
  - Develop an "IDEM Drinking Water Guidance Manual" that will be distributed to public water supplies during on-site visits or at technical assistance workshops;
  - Provide regional small system technical assistance workshops for all types of public water supplies;
  - Establish a toll free drinking water help line to answer questions regarding the operation, maintenance, and management of a public water supply;
  - Develop a web-site to educate and answer questions regarding the proper operation, maintenance, and management of a public water supply; and
  - Implement the State's Source Water Assessment Plan, which will provide valuable information for public water systems' source water protection efforts.
- The IDEM Drinking Water Branch Operator Certification Program provides assistance to operators regarding training and certification issues by:
  - Coordinating with the Indiana Section AWWA Operator's School Committee to provide an annual twelve (12) week short course for people preparing to take the operator certification exam;
  - Providing operators with information on how to obtain certification or continuing education units from such sources as the AWWA Teleconference and Seminar Video Library and the California State University Operator Training Program;
  - Coordinating with the Indiana Section AWWA to provide a one-day refresher course for operators that are scheduled to take the certification exam;
  - Coordinating with other water associations, such as the IWWA and IRWA to suggest and approve programs that provide continuing education units for certified operators.
- IDEM staff will continue to provide and improve program activities that currently are used to enhance the capacity of public water supplies and promote compliance with safe drinking water regulations. They activities include, but are not limited to, on-site inspections and follow-up, technical assistance, outreach activities, reminder letters for regulatory deadlines, updates on up-coming rules, monitoring waivers, educational materials, and construction permit reviews.

- The following items will be addressed as part of the implementation of the strategy:
  - Develop a Comprehensive Evaluation/Self-Assessment Form (by a contractor or IDEM);
  - Create a rating system to identify systems for capacity development;
  - Possibly develop new rules that will encourage capacity development among public water supplies and assist in the implementation of this Strategy;
    - Require a Comprehensive Evaluation (self-evaluation reviewed by IDEM) for systems that meet certain criteria, which indicate insufficient capacity;
    - Develop operation and maintenance rules that could include a requirement for contingency plans, manager training, or management signatures on MRO's.

Baseline Measures for Success of Capacity Development Program

The work group identified various factors that may be used as potential baseline measures to determine the effectiveness of the Capacity Development Program overall. Since capacity development is an incremental process, a variety of factors are included as baseline measures. It is expected that we may see noticeable improvements in many areas in the short-term, but possibly no impact on others in the same time period. However, other factors may show improvement over the long-term. Factors that may be used include, but are not limited to:

- Compliance data including the number of violations for monitoring and reporting, maximum contaminant level, action level, or treatment technique;
- Sanitary survey and site visit data to determine if the number and severity of problems are increasing or decreasing;
- Operator certification information to determine the number of systems required to have an operator that have an operator of the proper classification, the length of time that systems are going without operators, and the total number of operators compared to the total number of systems requiring operators;
- Information from operator training and professional affiliations to determine the number (or percent of the whole) of systems with professional affiliations and types of training provided;
- Monthly report of operation data to determine the percentage of systems that are turning in MROs;
- Enforcement figures to determine the number of formal regulatory actions initiated against public water systems for financial, managerial, or technical problems;
- IURC data to determine how many required systems are submitting their IURC annual reports and are paying IURC fees;
- Wellhead Protection Program tracking data to determine how many systems are up-to-date on their wellhead protection requirements (community water systems);
- Drinking water compliance data to determine how many systems have submitted their consumer confidence reports (community water systems);

There are also baseline measures that may be used to determine if capacity development efforts are working for a particular water system. The following information may be used to make these determinations, if applicable:

- Compliance data to determine the frequency of violations and the number of violations for monitoring and reporting, maximum contaminant level, action level, or treatment technique;
- Sanitary survey and site visit data to determine if the number and severity of problems are increasing or decreasing;
- Operator certification information to determine if the system has an operator of the proper classification and/or how long they go without an operator;
- Complaint database information to see if the number and severity of complaints against the system have decreased;
- Enforcement information to assess the number of formal regulatory actions initiated against the public water system for financial, managerial, or technical problems;
- System data that shows if the number of service outages have increased or decreased and consider the trends such as the number of customers affected or the percent of the system affected.
- The number of professional and training meetings attended by the water system and who is attending (i.e. the operator and/or the managers);
- IURC data to determine if the system is required to submit and are submitting their IURC annual reports and paying IURC fees;
- Wellhead Protection Program data to determine if the system is up-to-date on their wellhead protection requirements (community water systems); and
- Compliance data to determine if the system has submitted their consumer confidence reports (community water systems).

Summary

The Indiana Department of Environmental Management has considered and solicited public comment on the elements required by Section 1420(c)(2) of the Safe Drinking Water Act regarding the development of a capacity development strategy. A workgroup was formed, consisting of a diverse group of people interested in the operation, maintenance, management, and regulation of public water supplies. The workgroup provided input regarding the methods and criteria to use to identify and prioritize the public water supplies most in need of improved capacity. A method was developed to screen, categorize, prioritize, evaluate, and rate public water supplies using available information and a comprehensive evaluation process. The workgroup also identified factors that encourage or impair capacity development and incorporated some of the factors into the short-term and long-term implementation efforts of the strategy. The strategy incorporates the authorities and resources of the Safe Drinking Water Act , such as the use of DWSRF set-aside funds, and the Indiana Public Water Supply Supervision Program to promote compliance, encourage partnerships, and address the training and certification of operators. Numerous baseline factors have been identified to measure the effectiveness of the strategy for an individual public water supply as well as for public water supplies overall. The strategy, as a whole, serves to evaluate and promote the ongoing improvement and maintenance of the technical, managerial, and financial capacity of public water supplies in Indiana.

GLOSSARY OF TERMS

Action Level (AL) – The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
"At Risk" – A capacity development category in which the systems have very little, if any technical, managerial, and/or financial capacity to operate and maintain compliance with the SDWA.
AWWA - American Water Works Association
Boil Advisory – Procedure where a local or state health agency or a public water system issues an advisory that the water may not meet bacteriological standards. Water should be boiled for 5 to 20 minutes for disinfection purposes.
Connection Ban – An order imposed by IDEM that prohibits the connection of additional water main extensions to the public water supply, if the system does not respond and/or comply with an early warning order.
Contingency Plan – A plan, prepared by a water system or their contractor, which provides for special action to be taken by a system in case of a sudden event (i.e., flood or spill) which threatens the drinking water supply.
Community Water System – A public water system which serves at least fifteen (15) service connections used by year-round residents or regularly serves at least twenty-five (25) year-round residents.
Courtesy Reminder Letter - A letter sent to a public water system by the Compliance Section of the Drinking Water Branch before the end of a specified monitoring period which reminds them of the monitoring requirement.
Drinking Water State Revolving Loan Fund (DWSRF) – A program authorized by IC 13-18-21 to provide money for loans and other financial assistance, including forgiveness of principal if allowed under federal law.
Early Warning Order – An order imposed by IDEM on public water systems that have reported (on their monthly reports of operation) the highest daily pumpage, over the previous two (2) year period, that exceeds ninety-percent (90%) of the public water system's capacity.
Environmental Infrastructure Working Group (EIWG) – A group of representatives from various state and federal agencies that meets with communities to discuss all funding options for water and wastewater infrastructure projects.
Financial Capacity – The ability of a public water supply system to acquire and manage sufficient financial resources to allow the system to achieve and maintain compliance with 327 IAC.
Ground Water System - A public water system which has only ground water as a source of its water supply.
Ground Water Under the Direct Influence of Surface Water (GWUDI) – Any water beneath the surface of the ground with significant occurrence of insects or other macro-organisms, algae, or large-diameter pathogens such as *Giardia lamblia*; or significant and relatively rapid shifts in water characteristics such as turbidity, temperature, conductivity, or pH which closely correlate to climatological or surface water conditions. Direct influence must be determined for individual sources in accordance with criteria specified by IDEM. The determination may be based on site-specific measurements of water quality and/or documentation of well construction characteristics and geology with field evaluation.
IACT – Indiana Association of Cities and Towns
IDEM – Indiana Department of Environmental Management

Infrastructure – Any collection, treatment, storage, or distribution facilities under control of the operator of a public water system, including the operator or administrator of the system, which is used primarily in connection with the public water system and any collection or pretreatment facilities which are used in connection with the public water system, even if they are not under control of the operator of the water system. Infrastructure includes, but is not limited to: source development and rehabilitation, treatment, storage, transmission, and distribution.
IRWA – Indiana Rural Water Association
ISDH – Indiana State Department of Health
IURC – Indiana Utility Regulatory Commission
IWWA – Indiana Water and Wastewater Association
Maintenance Plan - A plan, prepared by the water system or their contractor, which details maintenance standards for the system. Items that should be addressed in a maintenance plan include, but are not limited to, maintenance and replacement schedules for mains, valves, pumps, instruments, and control panels.
Managerial Capacity – The ability of a public water supply system to conduct its affairs in a manner enabling the system to achieve and maintain compliance with 327 IAC.
"Marginal Risk" - A capacity development category in which the systems have some capacity, but it may not be adequate for operation of a public water system and will not be able to comply with all terms of the SDWA.
Maximum Contaminant Level (MCL) – The maximum permissible level of a contaminant in water which is delivered to the free flowing outlet of the ultimate user of a public water system, except in the case of turbidity where the maximum permissible level is measured at the point of entry to the distribution system. Contaminants added to the water under circumstances controlled by the user, except for those resulting from corrosion of piping and plumbing caused by water quality, are excluded from this definition. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.
Maximum Contaminant Level Goal (MCLG) - The maximum level of a contaminant in drinking water at which no known or anticipated adverse effect on the health of persons would occur and which includes an adequate margin of safety. Maximum contaminant level goals are nonenforceable health goals. The level of a contaminant below which there is no known or expected risk to health. MCLGs allow for a margin of safety.
Monitoring Waiver - An elimination of or a reduction in monitoring granted in accordance with Indiana drinking water regulations. Waivers can be granted for asbestos, cyanide, glyphosate, PCBs, and dioxin, which eliminate the monitoring requirements during a compliance cycle. Waivers can be granted for Volatile Organic Compounds (VOCs) and Synthetic Organic Compounds (SOCs) which can reduce the amounts of monitoring required by a public water system.
Monthly Report of Operation (MRO) - A report required monthly by IDEM for any public water system that changes the characteristics of their water by treatment, which indicates daily results of iron, manganese, chlorine, pH, and/or phosphate in the water, amounts of treatment chemicals used, and amount of water treated. This report is required to be signed by the certified operator. The surface water treatment rule reporting form is a supplement to the MRO.
Nonsusceptible population - Population which does not include the following: elderly, immuno-compromised, pregnant women, or children under six (6) years of age.

Nontransient Noncommunity Water System – A public water system that is not a community water system, which regularly serves the same twenty-five (25) or more persons at least six (6) months of the year.

OUCC – Office of Utility Consumer Counselor

Public Water System (PWS) or Public Water Supply System (PWSS) - A public water supply for the provision to the public of water for human consumption through pipes or other constructed conveyances, if such system has at least fifteen (15) service connections or regularly serves at least twenty-five (25) individuals daily at least sixty (60) days out of the year. "Public water system" includes any collection, treatment, storage, and distribution facilities under control of the operator of such system, and used primarily in connection with such system and any collection or pretreatment storage facilities not under such control which are used primarily in connection with such system.

Purchased Water System - A public water system which purchases all of its water from another public water system.

Reminder Letter - A letter sent to a public water system by the Compliance Section of the Drinking Water Branch after the end of a monitoring period to indicate that results of required monitoring have not been received by the Drinking Water Branch. These letters ask the system to either send a copy of the data to the Drinking Water Branch or provide public notification to their customers of the failure to monitor.

Safe Drinking Water Act – Commonly referred to as SDWA. An Act passed by the U.S. Congress in 1974. The Act establishes a cooperative program among local, state, and federal agencies to insure safe drinking water for consumers. The Act was last amended in 1996.

Sanitary Survey - An on-site inspection of the water source, facilities, equipment, construction, and operation and maintenance of a public water system for the purpose of evaluating the adequacy of such source, facilities, equipment, construction, and operations and maintenance for producing and distributing safe drinking water.

SBA – State Budget Agency

Significant Noncomplier (SNC) - A public water system which has enough violations (either monitoring and reporting, MCL, treatment technique, or action level) to be classified as a Significant Noncomplier (SNC) by EPA. The definition is included in Appendix G.

Storage Capacity - The distribution storage requirements based on maximum water demands in different parts of the system. Capacity varies for different systems and should be determined by a qualified engineer. Systems with no distribution storage will be considered to have inadequate storage capacity. Minimum storage capacity for systems not providing fire protection shall be equal to the average daily consumption (possibly less if the source and treatment facilities have sufficient capacity with stand-by power to supplement peak demands of the system).

Surface Water - All water occurring on the surface of the ground, including water in a stream, natural and artificial lakes, ponds, swales, marshes, and diffused surface water.

Surface Water System - A public water system, which is not a purchased water system, which gets its water in whole or in part from a surface water source.

Susceptible Population - A population containing any of the following: elderly, immuno-compromised, pregnant women, or children under six (6) years of age.

Technical Capacity – The physical and operational ability of a public water supply system to meet the requirements of 327 IAC.

Transient Noncommunity Water System – A noncommunity water system that does not regularly serve at least twenty-five (25) of the same persons over six (6) months of the year.
Treatment – The conditioning of water or removal of microbial and chemical contaminants. Filtration of surface water sources, pH adjustment, softening, disinfection, phosphate addition, aeration, and fluoridation are examples of treatment.
Treatment Technique (TT) – A required process intended to reduce the level of a contaminant in drinking water.
Warning of Noncompliance (WONC) - A letter sent to a public water system by the Drinking Water Branch indicating that a violation has occurred. For compliance purposes, this letter is sent after several violations as a final informal enforcement process prior to referral to the IDEM Office of Enforcement.

COPIES OF THE FOLLOWING APPENDIXES ARE AVAILABLE UPON REQUEST
CONTACT JANE LABBY, IDEM DRINKING WATER BRANCH
AT 317/308-3293 OR JLABBY@DEM.STATE.IN.US

Appendix A
Situational Examples of Capacity Building Tools

Appendix B
Table 1 – Characteristics of a Public Water Supply

Appendix C
Tools to Screen "At Risk" and "Marginal Risk" Systems

Appendix D
Factors That Encourage or Impair Capacity Development

Appendix E
Potential Baseline Measures

Appendix F
Tools That May Be Used To Build Capacity
Tools for Building Capacity for Small Systems

Appendix G
EPA Definition of Significant Noncomplier (SNC)